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ORIGINAL COMMUNICATIONS.

THE CAUSATIVE RELATION EXISTING BETWEEN THE ANATOMICAL ARRANGEMENT OF THE TISSUES AT VARIOUS AGES, AND THEIR MORBID GROWTHS.

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Read before the Pathological Society of Philadelphia, March 22, 1877.

THE etiology of morbid growths is of great interest, I conceive, to every one in this Society, but more especially to its surgical members, since they are oftener called upon to deal with such. It seems as yet beyond our power of explanation why such morbid growths should occur, and all will agree with me in the desirability of such knowledge, if attainable. I offer this paper in hopes that others who have larger opportunities of observation will be induced to investigate as to the truth of my suggestions, and either demonstrate or disprove them.

I shall only consider in this paper the pathology of the malignant morbid growths.

In the past two or three decades many diseases have been removed, by our improved methods of investigation, from the category of functional to that of organic affections, and "specific actions" are less resorted to than formerly to explain pathological processes. I think, therefore, that past experience has proved how illogical it is to assume some "specific" action when our inadequate means of investigations fails to give a ready explanation of morbid phenomena. I say our past experience, since it has been demonstrated that organic changes exist in supposed functional diseases, which had previously eluded our imperfect investigations.

Let me here state my belief in the purely local origin of all primary malignant growths, being exceeding sceptical about special conditions of constitutional origin, believing that more advanced knowledge will explain them better, on mere anatomical grounds. I have not the time, nor is this the place, to give a history of pathological histology; but if I did so, instances as surprising as the anatomical explanation

of the etiology of tumors would present themselves.

I believe that there has been too great neglect of the study of a most important portion of the tissues of morbid growths, viz., their vascular supply as compared with that of the normal tissues.

According to His and Waldeyer, by observing the first differentiation of the cells of the ovum into their three layers, we see that the intermediary nutritive apparatus arises not from a splitting-off from the inner and outer organo-poietic layers, but from a layer which grows in between them from the germinal area. When we consider that from this are formed the vascular and connective-tissue systems, and that they are distinct in their origin from the organs themselves, we can see that this parentage may have an important bearing on the pathology of morbid growths. Again, let me advert to the important fact that in after-life the tissues show most distinctly their parentage, and only growths resembling tissues similar to those normally formed by the ovular layer from which the diseased tissue sprang are ever found in it primarily.

If, therefore, a connective tissue be induced to take on morbid formative action, only a growth resembling such as are normally formed by the middle germinal layer will result. If, on the other hand, an epithelial tissue be irritated, not a connective tissue but an epithelial will result, or at least one such as is formed from either the inner or outer layer.

As long, therefore, as these two constituents of an organ receive their normal, proportional blood-supply, any irritation will result simply in a hyperplasia or hypertrophy. On the other hand, let one receive an undue vascular supply, an excess of one tissue—say the epithelial—will be produced, and that, too, in a limited area.

Now, the pre-eminent peculiarity of the carcinomata is that they do not respect the connective-tissue limits, that we find epithelial elements where only connective tissue should be present. I shall first refer to the epitheliomata, and take as a type those of the lips. Thiersch has shown that in the old a decided atrophy of the connective tissue of the lip is found in certain cases, so that the epithelial and glandular elements receive relatively a larger supply of blood than the connective tissue. If in such a con-

dition of the tissues any external irritation occur, such as the smoking of a short, foul pipe, or some accidental abrasion or chap, which is prevented in any way from healing rapidly, what will be the result? Clearly the tissue possessing the better blood-supply will outstrip in growth the one having the poorer supply of nutriment. But if this irritation obtained in an organ where the connective tissue was in normal amount, not an *epithelioma* but a *papilloma* would result. An irritation of the papillary portion of the skin causes these minute elevations to grow, and we have an outgrowth, a papilloma or "wart." But let this irritation go a step further; let the warty growth be constantly stimulated, and, by the mutual pressure of the papillæ, increased by the tendency to dendritic growth often found at their apices, the epithelial elements can no longer be thrown off, and, if I may use the term, retention-cysts are formed, crowded with cells. If the cell formation still continues, the masses of cells *must* grow in the direction of least resistance. Under the normal conditions in youth the connective tissue is too strong a barrier for extension in that direction; but in advanced age this, as has been shown, is so weakened in many cases as to permit the epithelial cells to penetrate more readily into the deeper portions of the lip than into the thick, unyielding, horny epidermis. In like manner, when the morbid process starts in the sebaceous glands of the lip, the cells find so little resistance that they readily penetrate into the subcutaneous tissues.

For the other forms of carcinoma I shall take those of the breast as the type. These occur, as a rule, at and after the middle period of life, often after years of almost ceaseless functional activity of the glandular portions of the organ, or at least before it has lost its full functional power, and yet just at the time when the connective tissue is relatively atrophied compared with the glandular. The explanation of the production of carcinoma here is similar to that for epithelioma, allowing for the differing anatomical arrangements of the parts.

Again, let us examine the breast some years later than in the supposed case above, and the conditions will be found to be reversed. Owing to the complete cessation of any demand for functional activity, the glandular elements atrophy, and now the connective tissue vastly preponderates.

Irritate such a gland into formative activity, and what results? As there is almost no glandular tissue present, it is manifest that the growth cannot well be glandular to any great extent. What then? Why, plainly a "connective-tissue cancer," a true schirrus, where the glandular elements proliferate very slightly, if at all.

If these views be correct, the objector may urge, *all* are liable to cancer in some form upon arriving at a certain age. Not so; for the relative amount of the various tissues, and the time at which they commence to atrophy, vary with each individual. One has a powerful muscular development, another a tendency to accumulate fat; one is old at forty-five years, another as young at seventy. We see this difference best shown, perhaps, in women, among whom the age at the time of the menopause has varied from thirty-five years to fifty-five, a difference of twenty years.

I believe that the so-called inheritance of cancer is this relatively earlier atrophy of the connective tissue, and a peculiar readiness to respond to irritants of the glandular elements transmitted from father to son.

If one hundred patients suffer from wounds of a precisely similar nature, extent, situation, etc., and are treated in the same manner, do we find the healing process alike in all? On the contrary, each differs in some points from the others. In one it heals by the first intention; in another by granulations; in a third it may slough; in a fourth a spreading ulcer may form; while in some others no reparative action may occur for a lengthened period: yet we explain these differing results, and properly, by no specific action in the wound, but by a difference of constitution and readiness to respond to an irritant. Now, what is understood by this differing of constitutions and irritabilities? Do we mean some unknown, unknowable specific something which produces these results, and these only, being capable only and always of doing this same thing? Certainly not, but some anatomical peculiarity whereby the blood- or nerve-supply is either normal, in excess, or deficient; that the cells of the part are produced with the exact rapidity requisite for organization, or too quickly or too slowly for it, and that all these aberrations are within our control, because by treatment we can alter the anatomical rela-

tions of blood- and nerve-supply to the tissues.

Now, the sarcomatous growths occur, as a rule, at an earlier period, when the system is in its prime, viz., when the intermediary nutritive apparatus is most active and the glandular is relatively less so. An apparent proof of this protective power exerted by the connective tissue at its prime is the fact that an adeno-sarcoma of the breast will remain for years in its original condition until the time of life arrives when the connective tissue commences to atrophy, when, the growth taking on cancerous action, the glandular elements invade this tissue. Another fact in support of these tumors being due to the anatomical arrangement of the tissue is their frequent occurrence after injury, which acts, of course, in a purely mechanical manner. They also occur in cicatrices, where, equally of course, irritation has been present and is still lingering.

Sir Astley Cooper has pointed out an interesting fact with regard to the breast,—that in the virgin, and in the intervals between lactation, the cellules of the gland are in an undeveloped condition, rendering it impossible to demonstrate them, even by injecting the ducts. Thus, at these periods the connective-tissue system of the gland preponderates over the glandular.

Let me suggest that the normal vascular supply of the various organs subject to primary malignant growths should be examined by careful injections in youth, maturity, at the climacteric, and in old age. If this be properly done, I hope that our labor will be rewarded by an anatomical explanation of many of the so-called specific irritants.

I am not prepared to say what is the exact nature of the irritation which sets up this abnormal action; but from the frequent coincidence of mechanical irritations in the case of epitheliomata, I am inclined to believe that there is in all cases some slight mechanical or chemical irritant acting upon the "*locus minoris resistentiæ*," anatomically prepared for the morbid growth. Now, by a mechanical or chemical irritant I do not mean a violent blow or a cauterizing agent, but anything that increases the amount of blood in the part, however unnoticed or unnoticeable it may be. To repeat, it is only when the blood-supplies of the glandular and connective tissues are not normally balanced that we

have a morbid growth; when they are, merely a hyperplasia or hypertrophy can result. The irritant from its very nature must at the outset at least be very difficult, if not impossible, to detect, for, were it otherwise, instead of a morbid growth inflammation in some form would result. The irritant must be slight and constant, and consequently most difficult of detection.

If this be the true explanation, why then are these growths so malignant, when they are mere hyperplasias of elements in themselves normal? For the following reasons. If in an organ with an already insufficient vascular supply to its connective tissue we have a rapid proliferation of epithelial elements, the blood-supply will be rendered relatively still more insufficient, notwithstanding the new vascular formation in the morbid growth itself. Then sooner or later the mutual pressure of the rapidly-proliferating cells will obliterate the smaller vessels, and necrobiosis will inevitably follow. The secondary so-called metastatic growths have their origin, I believe, in cells of primary growth conveyed by the lymph- or blood-currents into the various organs. These cells, endued with their exuberant pseudo-vitality, either by their own multiplication or by epithelial infection in the case of cancer, give birth to the secondary growths. Also, both the primary and secondary growths frequently prove fatal by preventing organs essential to life from performing their functions properly, since these growths infiltrate until they are actually the malignant one.

I trust some one having more experience and greater opportunities will test the truth of my suggestions by actual micro-histological examination, and I hope myself at some future day to be able to present to you the results of my own further labors. So much has been explained of late years anatomically about which we formerly were compelled to theorize, that it surely is not expecting too much to look for an anatomical reason for morbid growths. If such be found, many causes may excite the formation of these tumors, instead of a special one for each variety.

Let me here quote from a most prominent upholder of the hereditary and constitutional origin of cancer, Sir James Paget. He says, "But now let it be observed, this tendency to cancerous disease is most commonly derived from a parent

who is not yet manifestly cancerous, for, most commonly, the children are born, and sometimes even become cancerous and die, before cancer is evident in the parent; so that, as we may say, that which is still future to the parent is transmitted potentially to the offspring. Nay, more; the tendency which exists in the parent may never become in him or her effective, although it may become effective in the offspring; for there are cases in which a grandparent has been cancerous, and, although his or her children have not been so, the grandchildren have been."* . . .

With the greatest respect for Sir James Paget's opinions, I do not see why or how it is transmitted "potentially to the offspring." I would rather interpret after this fashion: the father possessing this peculiar tendency to the excessive atrophy of one tissue over the other transmits it to the children, as he does his features, etc., very possibly reinforced by a like evil tendency on the maternal side. In the case where he escapes totally there has been no local irritant, but with his children there has. Again, when it leaps a generation, I would prefer to say, it leaps any exciting cause. The fact of its earlier appearance in the offspring than in the parent† would seem to confirm this, since at the time of the conception of the child the tissues of the parent would be in their retrograde condition, and consequently most likely to produce a more intense predisposition to atrophy, or an actual earlier atrophy, in so far as the child starts with a lower grade of tissues at birth than the father did at his.

Paget likewise admits the fact that cancer is unquestionably a disease of degeneracy, as shown by the age at which it occurs.‡ This is precisely what I have tried to show, only that it is a relative degeneracy of certain tissues. Dr. Walshe has collected evidence that "the maximum amount of cancerous disease occurs in Europe, and that it is very rare among the patients of the hospitals at Hobart Town and Calcutta, and among the natives of Egypt, Algiers, Senegal, Arabia, and the tropical parts of America."

Mr. C. H. Moore also says, . . . "The vigor of its growth, as measured by the number and size of the deposits, generally increases instead of diminishing with the

exhaustion of the patient. Improvement of the health does not feed, but starves, the disease, the reverse of what would happen if cancer were directly dependent for its vigor upon that of the system."§ Very possibly this improved nutrition is directed mainly to the connective-tissue system.

Dr. Walshe suggests that it may be due to "the wasting influence of the higher civilization,"|| and I think it most likely, since civilization is certainly not calculated to promote the due nutrition of each and every tissue,—indeed, quite the reverse. The fact that deep mental distress has influence in favoring cancer would seem rational, since it seriously interferes with nutrition. So high an authority as Sir James Paget says on this point "that we can hardly doubt that mental depression is a weighty addition to the other influences that favor the development of the cancerous constitution. Nor is it strange that it should be so: it is consistent with the many other facts showing the affinity between cancer and depressed nutrition."¶ Even he, who has no belief whatever in the local origin of cancer, is compelled to admit that some parts are specially fitted for it, and that age increases this fitness, but he cannot say how, as in the following quotation: "We are of course disposed to look for explanation to peculiarities of tissue, and to their changes with age, and we can hardly doubt that these are chiefly influential."** Again, Paget gives us an important argument, as it seems to me, against the constitutional "specific" cause of cancer, in that he says, in a footnote to page 829, 3d edition, of his Pathology, "The induction of this secondary cancerous cachexia by the presence of a cancerous tumor is well illustrated by such cases as sometimes occur, in which, after the removal of the tumor, the general health remarkably improves, to fail again when recurrence ensues, and again mend after the second removal."

Secondary cancerous cachexia here means what is generally understood by the ordinary cancerous cachexia.

The lungs, liver, and bones are the most usual sites for the secondary growths, which is easily explainable by examining the anatomical arrangement of the blood-vessels in these organs, and their relative

* Page 792, Paget's Surg. Pathology, 3d Lond. ed.

† Page 793, op. cit.

‡ Page 798, op. cit.

§ Holmes's Syst. Surg., vol. i. page 590, 2d ed.

|| Pages 799, 800, Paget's Surg. Pathology, 3d Lond. ed.

¶ Page 800, op. cit.

** Page 804, op. cit.

position in the route of the circulation. Carcinomata are undoubtedly propagated along the lymphatic system. All the lymph is emptied into the veins, and must go through the lungs first. Here the fragments, if of too large size, will be arrested; if not, they will pass on to other organs possessing either capillaries of smaller diameter or mechanically favorable for entangling small particles. Just this latter condition obtains in the liver and bones, the former having a double capillary network varying in diameter, and the latter having vessels coming off at acute angles in a perfectly rigid surrounding tissue. There is also reason for believing the blood-current is slower in the bones than in some other organs. In the cases apparently not thus explainable I would call attention to the fact that small secondary tumors may have been overlooked which have really been the primary sources of the truly tertiary growths, which we wrongly consider secondary, or, as some would have, primary, because not in the proper anatomical line for emboli.

To save space, I have not alluded to the more common arguments for or against the constitutional origin of cancer, since most are probably familiar with them.

2109 PINE STREET, March, 1877.

THE EARLY OPERATION FOR STRANGULATED HERNIA.

BY OSCAR H. ALLIS, M.D.,

Surgeon to the Presbyterian Hospital.

A PHYSICIAN practising in an adjoining county said to me, "I recall six operations for strangulated hernia, and all of them were fatal." My rejoinder was, "I recall six cases, and only two of them were fatal." To my question, How soon did death occur after the operation? he replied, "In one the patient was dead before the operator had cleaned his instruments; in a second the operator had not reached home, a distance of five miles; a third died during the afternoon; and none of them survived the operation twenty-four hours." In the two fatal cases that I alluded to, the operation was performed by a skillful surgeon, but death supervened on the following day: so that in the eight cases the issue was in no way attributable to the operation.

Such a fatality as this recorded of the

operation for strangulated hernia must certainly have a bad effect upon the popular mind. With the people it is the operation that kills, and not the rupture. They look upon the operation as offering but a slight chance of relief. They recall cases operated upon by the most eminent surgeons that resulted in death, and hence they often meet one at the outset with, "Doctor, no cutting. If the patient is to die, let him die without any cutting."

But the patient and friends are not to be blamed for their obstinacy. It is the boast of some physicians that they have never failed to reduce a strangulated bowel; and some even venture to say that if a bowel is not returned in its early stages it is a reflection upon the skill of the attending physician. In a case of strangulation occurring in a neighboring city a man was about to be operated upon, when another physician was called in and succeeded in relieving it by taxis. The circumstance was repeatedly narrated to me as a great triumph over surgery, and no doubt hundreds of families stand sponsors for the achievement, and will hand it down to posterity, little dreaming that that one successful case may exert a fatal influence upon scores that will follow in its path.

The reduction of hernia by taxis must vary with the varying circumstances of each individual case. When the ring is large and the canal (as in old herniæ) necessarily short, one may say with propriety, "I reduced the hernia;" but when the canal is long and narrow, *then nature, and nature only*, can reduce it. I have seen cases that it would have been impossible to restore without traction *from within the abdominal cavity*. *It is only when the bowel can assist the taxis that reduction of small herniæ is possible.*

There are surgeons of large and valuable experience who would not resort to taxis when the strangulation had persisted twenty-four hours, especially if efforts had during that time been made to relieve it. If called in such a case they would operate without delay. Their reasons, founded on experience and common sense, are, that mortification must be imminent at this time, and that any resort to manipulation must not only imperil the vitality but also endanger the integrity of the constricted bowel. This is a most important point, and it would be a good rule of practice to *institute no manipulation after twenty-four*

hours, especially if the symptoms have been accompanied by violent and continuous vomiting.

Neither is it safe to leave it to the judgment whether the time has arrived for operative procedure or not. *The time has arrived the instant nature, assisted by the best-directed efforts of the physician, has failed.* Before the introduction of anæsthetics, ice and opium had their value; but, taxis failing after complete relaxation from the former, the knife should be resorted to, certainly no later than twenty-four hours, and this will often be found to be too late. What is to be gained by delay? Will the swelling of the entangled gut, the outpouring of serum and lymph, the advancing peritonitis, and the hourly lessening strength of the patient accomplish what earlier and more favorable measures have failed to do?

That the experience in individual cases may mislead one may be seen in the wide difference in three cases of femoral hernia. The first made a good recovery after six days of strangulation; the second survived (with temporary artificial anus), the operation having been performed on the fifth day; while a third died two days and a half from the first constriction. Death in some cases may fairly be attributable to shock, and occurs before inflammatory symptoms can be detected. Indeed, who can estimate the prostration from such long-continued and paroxysmal pain, aggravated by violent and repeated vomitings?

The operation for the relief of a strangulated gut is dreaded, and I think without sufficient reason, by many practising physicians who skilfully perform more difficult operations. No physician practising obstetrics would be exonerated from neglect to possess and skill to use the forceps, and yet the patient and well-directed labor that qualifies him for the assumption of the latter responsibility will fit him for a far less bloody and possibly less important one, for in the latter case only one life is placed in jeopardy.

I shall not attempt in this article to clear up anatomical difficulties that so perplex the student. I know of no way to relieve his mind when, after listening to lectures upon this subject, he comes forward with the pertinent questions, "*If in oblique inguinal hernia we are to cut upward and outward to avoid the epigastric artery, and in direct inguinal hernia we are to cut up-*

ward and inward for a similar reason, how are we to determine its position in old inguinal herniæ, which we are told may be either direct or indirect, and without a possibility of determining which?"

And again, "*In femoral hernia, to cut outward will endanger the vein; to cut downward will do no good; to cut inward will not relieve the constriction; while to cut upward, the only direction that will relieve the constriction, will endanger the obturator artery in one case in three and a half.*"

In such a dilemma it is not to be wondered at that the student leaves college dreading hernia more than any other branch of his future work; and yet from years of "quizzing" I can say that there is not a department of medicine upon which teachers are more thorough than upon the one under consideration. The anatomy and various steps in the operation are too clearly enunciated in the textbooks to require repetition here.

The chief danger in the operation is in the last step,—i.e., the one that liberates the constriction. Here two structures impede the operation. The gut has been wounded by Lawrence, Sir A. Cooper, Cloquet, Jobert, and Liston, and in fourteen cases severe and at times fatal hemorrhage has followed this last and most important step.

To render the operation as free from danger as possible, many hernia directors and hernia knives have been constructed. I have never seen an operation in which the finger was not the best and safest guide. By the forefinger of the left hand the constriction can be detected and the bowel held out of the way, while at the same time it furnishes a guide for the blade of the knife as it is carried to the point of constriction. Still, there are times when the most skilful and most experienced operators have found a director necessary, and, as such an instrument is of but a trifling cost, it is best to possess one.

Through the skill and patience of Messrs. Tiemann & Co., of New York, I have added to my case of instruments a hernia-tome that I think will render the operation free from the dangers that have been enumerated.

Fig. 2 represents the instrument when taken apart; *a*, the blunt-pointed blade; *b*, the nut that controls the movements of the shield; *c*, the shield that may be made to conceal or expose the blade by turning the nut *b*.

Fig. 1 represents the knife closed and ready for use. The blade is entirely covered, and cannot be made to cut anything. In this condition the blunt point of the knife may be carried down along the finger to and beyond the constriction,

perform the reduction himself, a sort of *felo-de-se*, as he termed it, the weight of the body supplying the extension, while the counter-extension was made by the operator.

"The method was first described to him by a friend of his in Vermont, Dr. J. G. Allen, who had hit upon it accidentally, about two years ago, while in the act of lifting a patient suffering from this dislocation."



and the little notch seen just behind the blunt point be made to catch the constricting band. The blade by turning the nut can now be gradually uncovered, while at the same time the tip of the instrument is pressed against the fibres of the ring, which will yield as soon as it comes in contact with the cutting edge.

To those who are accustomed to the operation of hernia, suggestions are very commonplace. It is to those who dread the operation, but who feel the importance of being prepared for it, and to those whose experience is as yet meagre, that such an instrument recommends itself. Its cost will not greatly exceed that of the ordinary blunt-pointed herniatome; and, inasmuch as it will take the place of two instruments,—the hernia knife and the blunt-pointed bistoury,—it will be cheaper in the end.

1328 SPRUCE ST., PHILADA., July, 1877.

NOTE ON THE AUTOMATIC REDUCTION OF HIP-JOINT LUXATION.

BY H. H. A. BEACH, M.D.

IN the issue of the *Times* of June 23, 1877, is a letter from New York, dated June 19, 1877, which states that "Dr. A. B. Crosby has just given at the Academy of Medicine an exposition of what he terms the *automatic method of reducing luxations of the hip*." From this letter I extract the following:

After flexion of both thighs, "Dr. Crosby then placed his hands under the calves of the legs, quite near the knees. . . . Raising the pelvis a short distance from the floor, the head of the bone at once slipped in. He explained that in this procedure the patient was made to

perform the reduction himself, a sort of *felo-de-se*, as he termed it, the weight of the body supplying the extension, while the counter-extension was made by the operator."

"In Dr. Bigelow's admirable monograph on luxation of the hip (a copy of which, strange to say, he found it difficult to lay his hands on in New York), he has found that the same position was used in a number of instances there recorded, but the method pursued was always different from that which he [Dr. Crosby] had ventured to call the automatic."

(*Phil. Med. Times*, June 23, pp. 447, 448.)

In connection with these remarks of Dr. Crosby, I have only to say that it is a little difficult to see why Dr. Crosby flexes and lifts both thighs. He thus loses half of the counter-extending weight of the body. Dr. Bigelow flexes only the dislocated thigh, and suspends the body by that alone. Otherwise, Dr. Crosby's alleged novelty is identical with the method fully described by Dr. Bigelow in his monograph. It is the method preferred by him, and I have repeatedly seen it efficient in his hands. It has been also used in England and credited to Dr. Bigelow.

His description of this method is as follows (see "The Hip," H. C. Lea, Philadelphia, 1869, p. 46). As the work is out of print, I have copied it.

"REDUCTION OF THE DISLOCATION UPON THE DORSUM.—This dislocation may be equally well reduced by traction or rotation.

"By traction. 1. Lay the patient, when etherized, on his back upon the floor, bend the limb at the knee, flex the thigh upon the abdomen, adduct and rotate it a little inward to disengage the head of the bone from behind the socket. The Y ligament is then relaxed. . . . The thigh need only be forcibly lifted or jerked towards the ceiling with a little simultaneous circumduction and rotation outwards, to direct the head of the bone towards the socket.

"2. The surgeon's foot (divested, it

need hardly be said, of boot or shoe) may be placed on the anterior superior spinous process of the ilium, or on the pubes, to keep the pelvis down, while he pulls the flexed knee up. Or, in the same way, while assistants suspend the pelvis a few inches from the floor, by a strip of board passed transversely under the calf near the ham, the surgeon may with his foot thrust the pelvis down into its place."

The mere weight of the body is not always sufficient to accomplish the object. Dr. Bigelow elsewhere shows that forcible traction is sometimes required.

BOSTON, June 30, 1877.

FALLACY OF TROMMER'S TEST.

BY DR. GEORGE HAY,

Analytic Chemist.

IN these days, when the chemical examination of urine forms such an important factor in the diagnosis of disease, it is plain that the value of such examinations will depend upon the accuracy with which they are performed. This will become evident as I proceed. A medical friend here brought me a few days ago a sample of urine, and requested me to examine it for albumen and sugar. The urine was of high specific gravity. In his presence I examined it for albumen, and found that to be entirely absent. I now applied Trommer's test for sugar in the usual way; that is to say, I poured a quantity of the urine into a test-tube, added two drops of solution of sulphate of copper, and followed this by excess of solution of potash. Upon boiling, a precipitate, quite abundant, of suboxide of copper was obtained at once. My friend was astonished. I asked him whether he had been administering any chalybeate preparation, and was told that he had been administering phosphate of iron and quinia. I advised him to discontinue the use of medicine altogether for a week, and then to bring me a fresh sample of the urine. He did so, and I again applied Trommer's test, with the same result as before. I performed the same experiment three times in succession, and always obtained a precipitate of suboxide of copper. Here then was a case in which ninety-nine out of a hundred medical men would have diagnosed *diabetes mellitus*. But I remembered that many other substances besides sugar will reduce oxide of

copper in alkaline solution, and for this reason I proceeded to examine in a very different manner. A quantity of the urine was evaporated to dryness on the water-bath. The dry residue thus obtained was treated several times with boiling absolute alcohol, and the alcoholic solution filtered through paper. This alcoholic solution was now evaporated to dryness, and kept at 212° F. for some time, until all alcohol was completely expelled. The alcoholic extract was then dissolved in water, and the aqueous solution passed through a filter. By this means, had there been any grape sugar in the urine, it would have been separated from substances likely to interfere with the test. I now applied Trommer's test to this aqueous solution, and found that sugar was *entirely absent*. I repeated this method of examination three times with the same urine, and in no instance obtained any precipitate whatever. Wishing now to make an *experimentum crucis*, I took a quantity of the same urine and *added* to it a minute portion of grape sugar. I evaporated to dryness, and proceeded exactly as described above. On now applying Trommer's test I obtained at once an abundant precipitate of suboxide of copper, although I had taken care to add a very small portion of the sugar. It thus appears to me that Trommer's test as usually applied only affords negative and not positive evidence: in other words, if no precipitate of suboxide of copper is obtained, then it may be safely concluded that sugar is absent; but the obtaining of a precipitate as the test is usually applied is no evidence of its presence. I am thoroughly convinced that in a multitude of instances a poor patient has been virtually condemned to death by his physician, on the evidence afforded by Trommer's test as usually applied, when in fact there was not a particle of sugar in his urine. I consider Trommer's test absolutely fallacious and unreliable *as it is usually applied*. The high specific gravity of this urine was due to the fact that it was loaded with urea.

45 SOUTH DIAMOND ST., ALLEGHENY CITY, PA.
May 25, 1877.

THE DISTRICT MEDICAL SOCIETY OF CAMDEN has recently published its fee bill, which fixes the honorarium of an office visit at from one to five dollars, of an ordinary visit at from two to five dollars, and of a consultation visit at from five to fifty dollars.

TRANSLATIONS.

ACTION OF BUTYLCHLORAL.—H. Windelschmidt (*Centralbl. f. Chirurgie*, No. 14, 1877) confirms Liebreich's observations regarding the pharmaco-dynamic peculiarities of butylchloral. Its effect upon rabbits is hypnotic in small doses; in larger quantity it acts as an anæsthetic, the anæsthesia beginning at the head and extending downwards until the whole system is deeply narcotized. Minimal doses increase the frequency of respiration, small doses diminish it, large doses are followed by respiratory paralysis. Small doses do not alter the pulse-rate; even larger doses affect this only slightly, compared with the change in respiration. Small doses, up to .02 centig., hypodermically injected, increase the rate of both pulse and respiration, particularly the latter. Doses of .06 centig. cause the respiration to decrease greatly in frequency, while the pulse remains unaltered. Larger doses (.08 centig.) reduce the pulse to one-half, the respiration to one-fourth its normal rate. A dose of one grm. causes profound narcosis accompanied by general anæsthesia. The temperature rises at first, but later sinks decidedly. x.

ANTISEPTIC PROPERTIES OF BICHROMATE OF POTASSIUM.—M. Lanjorais (*Le Mouvement Méd.*, 1877, p. 310) has found that the addition to water of one per cent. bichromate of potassium will prevent the formation of vegetable organisms, even when the solution is exposed to the open air. Meats, urine, gelatine, etc., are all preserved intact. The addition of $\frac{1}{1000}$ part bichromate to beer prevents its turning sour. A piece of meat preserved in an aqueous solution of bichromate during three months presented the appearance of gutta-percha. Contrary to what is observed regarding meat preserved in fuchsin, dogs refused to eat meat thus preserved. x.

HYPODERMIC INJECTION OF ETHER.—Dr. Ortille (*Bull. Gén. de Thérap.*, 1877, p. 38), being called to see a child of twelve who had injured her head by a fall, found her unconscious, pulse small and irregular, no bleeding at the nose, jaws tightly closed, pupils *strongly contracted*. He injected \mathfrak{Lxv} of ether under the skin of the sternal region, which caused a swelling the size of a pigeon's egg. This he gently manipulated until it was entirely absorbed. Within

five or six minutes the pulse returned and the pupils became dilated. A few teaspoonfuls of brandy were given, and in a couple of hours the child was conscious. No discomfort ensued from the injection. In similar cases the pupil is the guide, but the injections of ether should not be continued if the temperature rises. Cerebral anæmia is the condition which calls for this treatment.

INJECTION OF LIQUIDS INTO THE BLADDER.—At the same meeting of the Society, M. Duchaussoy alluded to a communication in one of the journals in which the question was asked, "Is it possible to introduce liquids into the bladder without the aid of a catheter?" In reply, M. Duchaussoy asserted that nothing is easier. A caoutchouc bag of eight or ten ounces' capacity, provided with a tube terminating in a cone-shaped nozzle, can be introduced into the meatus, and with very moderate pressure the amount of fluid necessary can be forced into the bladder. The method is useful when the urethra is greatly inflamed. x.

CHRONIC ANÆMIA FOLLOWING NERVOUS AND GASTRIC DISTURBANCE OF FIVE YEARS' DURATION—TRANSFUSION—CURE.—At a recent meeting of the Acad. des Sciences, M. Oré read the following notes of a case coming under his observation, cast in the form of a series of conclusions. 1. The cure was obtained with only forty grammes of blood ($\mathfrak{f3x}$), the patient having suffered five years. This goes to show that the quality of the blood infused is a more important factor in these cases than the quantity. 2. In order that the operation should be performed without subsequent complications, puncture should be made without laying bare the vein. 3. The transfused blood acts in two ways: first, in stimulating by its globules the organs which have become reduced to a condition of complete atony; second, in determining a proliferation of new globules. This double action was observed in a striking degree in the case of the patient under consideration. The very evening after the transfusion the patient's appetite returned to a remarkable degree, the vomiting was arrested, and the neuralgic pains were lessened to such an extent that the usual daily hypodermic injections of morphia were discontinued. As to the proliferation of globules by transfusion, which M. Oré has long maintained in opposition to the views of Worms,

Muller, and the German school, it is, he thinks, incontestably demonstrated by five enumerations of the blood-globules made in this case. Already in Behier's patient Lionville observed a constantly increasing augmentation of the globules: January 29, 850,000 globules were counted, February 13, 1,850,000, March 4, 2,029,500. "These figures demonstrate beyond doubt," said Behier at the time, "that, life being reanimated by the injection of tonic blood, the manufacture of new globules went on progressively." It may be said that the function of digestion having been so rapidly established, the augmentation of the blood-globules was the result of a properly regulated alimentation and a more complete nutrition. To be sure, the improvement in digestion may have aided the formation of new globules; but this alone would not explain the rapid and decided augmentation.—*Bull. Gén. de Thérap.*, 1877, p. 367. x.

INFLUENCE OF BATHS OF VARIOUS TEMPERATURE UPON THE BLOOD-PRESSURE.—Rennow (*Centralbl. f. Chirurgie*, 1877, No. 17) experimented upon curarized dogs and found that baths of 30° to 35° Centigrade (86° to 95° F.) have but little influence upon the blood-pressure. Baths over 35° cause a quick, transitory increase, followed by a lowering of the pressure. If the animal after a bath at 35° or above is allowed to remain in the ordinary atmosphere of the room, or if it is drenched with cold water, the blood-pressure increases, and alternates with a lowering of pressure which is more marked the colder the affused water is and the higher that of the bath was. Baths under 30° cause increase of blood-pressure until the temperature of the body begins to fall. A continuously heightened temperature of the body from baths of over 35° increases the blood-pressure. Section of the nervi vagi did not alter the effect of the baths, but section of the spinal cord on a level with the second cervical vertebra was followed by a lowering of pressure which continued unaltered in spite of baths and cold affusions. From this the author draws the conclusion that in alteration of blood-pressure by hot baths and cold affusions the vaso-motor centres are excited reflexively through the sensory nerves. x.

DEVELOPMENT OF PHTHISIS BY THE INGESTION OF TUBERCULOUS MATTERS.—M. Metzquer read before the Académie de

Médecine at a recent meeting the result of experiments which he has made upon this subject. He arrives at the following conclusions:

1. Tuberculous matters ingested determine after a certain time phenomena of irritation and inflammation of the intestinal canal at points where these matters have been detained any length of time: this initial circumstance is indicated by diarrhoea and progressive emaciation.

2. Intestinal thromboses are observed, resulting from hyperæmia and embarrassment of the circulation. These thromboses may give rise to emboli.

3. The inflammation may be ulcerative, and then a path is open—and it is the only one—to infection, with all its consequences.

4. *Pneumonie vermineuse*, which certain experimenters assert can be easily differentiated from tubercle, cannot at one point be distinguished, and, according to the ablest micrographers, has frequently been a cause of error in the question. In no case can the ingestion of tubercular matters be regarded as a means of inoculation of phthisis.—*Bull. Gén. de Thérap.*, 1877, p. 470. x.

ATROPHY OF THE CEREBRAL CONVOLUTIONS CONSECUTIVE TO OLD AMPUTATIONS OF MEMBERS ON THE OPPOSITE SIDE (*Centralbl. f. Med.*, 1877, No. 15; from *Gazette Médicale de Paris*, 1877, No. 5).—Since the appearance of Vulpian and Dickinson's works it has been known that after amputations that portion of the spinal cord from which the nerves of the amputated part arise become atrophied to a not inconsiderable degree. Whether, however, the corresponding portions of the brain atrophy has not as yet been determined, though the following experiments by Pitres add to our knowledge in this respect. Pitres exarticulated the fore-leg of two kittens at the shoulder-joint. Both animals developed well until twenty-eight months after the operation, when they were killed. Post-mortem examination gave the following results. The spinal cord showed in both cases a decided atrophy on that side of the cervical enlargement corresponding to the exarticulated limb. This atrophy extended over a length of from three to four centimetres. Above and below, the spinal cord was perfectly symmetrical. The brains of these animals showed no signs of atrophy or other abnormal change. x.

PHILADELPHIA
MEDICAL TIMES.

PHILADELPHIA, JULY 21, 1877.

EDITORIAL.

AN OLD BOOK.

TO those of our readers who are kept in the city these dog-days because they have not much practice and therefore cannot afford to leave what they have, or are detained amid radiant bricks and mortar because they have so much of practice that they cannot afford to leave it, we commend for an idle hour an old book (printed in 1819) which has recently fallen into our hands. This naïve "Statement of Improvements in the Theory and Practice of Medicine," published by "Thomas Ewell, of Washington City, and Surgeon to the United States Navy," in 1819, opens with a philippic upon the University of Pennsylvania, which is especially directed against the power vested in the trustees to appoint professors. It is an early page of the now old story, the discussion whether a medical school should be managed solely by its faculty, or, so far as appointments are concerned, by a board of trustees.

The chapter which will be read with most wonder and profit is a letter containing "Remarks concerning Generation," to which is added the "Best Plan for Preventing Excessive Population." In this is put forth the discovery that "oxygen" is necessary for impregnation. The importance of the rôle played by "vital air" in the supreme physical act of the human organism, and the antipathy of azotic gas to the human sperm, is upheld by asserted facts and reasonings which in their nature and manner remind one forcibly of the lucubrations of the supporters of the germ theories of disease. The astonishing number of births among the negroes of the South is shown to be due to their amorous

fondness for the daylight and abundant air of warm, sunny hill-sides, and the barrenness of some married women to the modesty which exposes the palpitating, unformed life to the "air of beds late at night becoming so foul as to extinguish burning tapers when introduced." We call the attention of some of our enthusiastic admirers of the therapeutic powers of oxygen to this new use of the agent. Dr. Ewell is a follower of Malthus, but alike for those who want and for those who do not want children he has solved the problem. By the sterile, longing for the spring of maternal love to gush forth, embraces are to be received in a tub of oxygen; for the over-fertile, oppressed with the cares and responsibility of multiplied offspring, a vessel of carbonic acid is to be the faithful companion of the chamber; and thus happiness is to be restored to the fallen race of Adam.

THE ASSOCIATION OF AMERICAN
MEDICAL COLLEGES.

THIS Association has at last, chiefly through the efforts of Prof. Edward Curtis, of New York, taken permanent form by the adoption of constitution, by-laws, and articles of confederation. Although the articles of confederation are so worded that they do not always really command what they seem to at first sight, and although they can, and undoubtedly will, in some important respects be rendered null, yet we believe good will be accomplished if a sufficient *esprit de corps* can be maintained and a sufficient outside pressure of public opinion steadily kept up. The enthusiasm of the hour of signing will hardly burn so brightly under the winter snows of self-interest, and there is too much force in the excuse of the old tippler, "All signs fail in a dry time," to allow the medical press to relax its efforts. In one very important particular the articles of confederation are so worded that they cannot be honorably avoided, and

will assuredly pinch some of our Eastern colleges. In the requirements of graduation it is positively demanded that the candidate file a certificate from some respectable physician, showing that he has gone through three years of study. We trust a strict watch will be kept upon the practices of the signing colleges upon this point.

In regard to fees, no promissory notes or promises to pay are allowed to be accepted, but fees may be remitted or reduced for five per cent. of the class by the faculties, and indefinitely by boards of trustees. It is evident how these clauses will conjointly act. A student offers a promissory note; with dignity the dean replies, "We can't take this, but"—studying well the possibilities of the case—"we will reduce your cash payments five, ten, twenty, thirty, or forty per cent.," according as his judgment measures the pocket of the aspirant. Plainly, this does not touch in any way the underbidding, the huckstering of tickets which have been one of the disgraces of medical education in this country. At the best, the trade is simply put on a cash basis.

LEADING ARTICLES.

DIALYZED IRON.

FOR administration by itself as a pure chalybeate, the new preparation known as dialyzed iron leaves almost nothing to be desired. It is a clear, neutral, very deep wine-colored liquid, free from taste and apparent astringency, and bearing perfectly dilution with pure water, although water containing salts precipitates with it: our Schuylkill water will sometimes precipitate it. It is undoubtedly a powerful chalybeate. In at least one case we know of, it was well borne after various other preparations of the metal had been abandoned on account of the obstinate constipation they produced.

It has long been known that an aqueous solution of ferric chloride is capable of dissolving the recently precipitated ferric

hydrate, and that by evaporation a solid soluble compound or mixture may be obtained. In this way one molecule of the chloride may readily be made to join with from five to seven of the oxide. There is some difference of opinion as to whether this is a chemical combination or merely a mechanical mixture; but it certainly facilitates writing to speak of the compound as an oxychloride.

Dialyzed iron is made by precipitating ferric chloride with diluted water of ammonia, washing the ferric hydrate which falls, dissolving it in a solution of ferric chloride, and placing the result in a dialyzer. Here the iron solution is separated from water by a parchment membrane, and is gradually deprived more or less completely of its chlorine by the passage through the membrane of a chlorinated compound.

It was asserted originally by Graham, the discoverer of dialyzed iron, that "mainly muriatic acid passes" through the dialyzer, and that the iron is left in the form of a soluble colloidal ferric hydrate. This hydrate has, however, never been obtained entirely free from chlorine, and it seems most probable that even in Graham's solution the iron existed as an oxychloride. Further, the solution obtained by Graham was not permanent, gelatinizing with separation of ferric hydrate in about twenty days. The solutions now in the market under the name of dialyzed iron are permanent, and must contain more chlorine than that of Graham; so that it seems almost certain that the iron is in the form of a very basic oxychloride.

As already stated, dialyzed iron is precipitated by various salts. With arsenical preparations it acts with great rapidity. Judging from its behavior in the test-tube, it is even a better antidote to the poison than is the freshest precipitated oxide. Experiments upon animals are, however, necessary before a final judgment can be reached upon this point.

The London chemists Messrs. Squire state that they introduced dialyzed iron as long ago as 1869; and it has been imported both of French and German origin. Many of these foreign products have been shown to be comparatively worthless, having been either not at all dialyzed or very imperfectly so. We are, therefore, very glad that several of our Philadelphia firms have energetically taken the matter in

hand. The only sample submitted to us is that of John Wyeth & Brothers, which appeared to be all that could be desired. In examining a preparation the possession of the following qualities should be attended to: transparency, precipitation by feeble saline solutions, and freedom from distinct taste and from any acid reaction.

CORRESPONDENCE.

NEW YORK LETTER.

NEW YORK, July, 1877.

TO THE EDITOR OF THE PHILA. MEDICAL TIMES:

DEAR SIR,—An unusually interesting case of, apparently, *reflex spasm* was brought before the Neurological Society at its June meeting, by Dr. Spitzka. The patient was a man of about fifty years of age, and the spasm, which always accompanied inspiration, occurred at irregular intervals, and, as Dr. Spitzka pointed out, mainly affected the trapezii and scaleni muscles. The platysma myoides was developed in a very remarkable manner, and the manner of its action was beautifully exhibited, not only at the time of the spasm, but also during the intervals between the sudden and momentary paroxysms. The history given was simply that five years ago he began to be troubled with cough, and about the same time the above-mentioned nervous phenomenon became developed. Since then he had made the round of the various colleges and clinics, but had never been able to obtain any relief from the troublesome affection. Three years ago Dr. Alonzo Clark had given it as his opinion that the spasm was occasioned by a tumor, probably not aneurismal in character, situated behind the manubrium of the sternum. Some specialists in neurological science had thought the spasm to be choreaform in its nature, and under this supposition the patient had been subjected to a prolonged course of zinc and arsenic, but without deriving any benefit therefrom. Dr. Spitzka was disposed to accept Prof. Clark's explanation of the trouble, and said that he had found sufficient dulness on percussion, extending into the left infra-clavicular space, to convince him that there was a tumor present. The latter he believed to be probably of a scrofulous character, since it seemed to be at present gradually diminishing in size under the use of the iodide of potassium, the area of dulness not being as extensive now as it had been formerly. He thought that aneurism might now be safely excluded, for if this had been present some further signs would in all probability have been developed by this time. All observers had noticed that there were no abnormal murmurs about the heart. The spasm he regarded as analogous to hiccup, and he believed it to be reflex in

its nature, because all the muscles affected were supplied by the cervical plexus.

Dr. E. C. Seguin, President of the Society, stated that the case had at one time been under his charge, and that he was responsible for the diagnosis of choreaform spasm. As had been stated, however, all treatment under this supposition had proved futile. The patient had been sent to him by Dr. Andrew H. Smith, of the Throat Department of the Manhattan Eye and Ear Hospital, who had made a most thorough examination of the larynx and had found that there was no paralysis whatever of the vocal cords. The laryngeal muscles, however, were largely involved in the spasm, and he regarded the latter as mainly in the range of the spinal accessory nerve. With all due deference to the opinion of Prof. Clark, he confessed that he had never been able to convince himself that there was sufficient dulness on percussion to indicate the presence of a mediastinal tumor.

After a discussion of Dr. Pallen's paper on "*Menstrual Neuroses*," read at a former meeting, Dr. James C. Kiernan, of the Ward's Island Lunatic Asylum, read a paper on "*The Patho-Psychology of Alcoholism and its Relation to Paresis and Epilepsy*." In the outset he remarked that some observers who were inclined to a rather sentimental view of the subject gave to alcoholism a position about midway between the neuroses and insanity, but that he could not regard this as by any means proved.

It was no doubt true that alcoholism was a frequent cause of insanity; but we should not rely upon statistics for the substantiation of such an assertion, for these were very deceptive. The fact could only be established by clinical observation. An agent capable of causing acute mental aberration might undoubtedly result in chronic trouble of a similar character. It was true that dementia not unfrequently resulted where alcoholism was present; but we should remember that heredity and weakness of the will often had as much to do with the causation of this state as the latter. Dr. Kiernan enlarged upon the strong analogy existing between alcoholism and paresis and the extreme difficulty there sometimes was in making a diagnosis. It was not uncommon for acute alcoholism to be mistaken for paresis, but occasionally mixed cases were met with in which both were present. Alcohol was without doubt to be considered an exciting cause of paresis, but, after the most extensive observation, he had been unable to find that there was any connection between alcoholism and epilepsy, as was contended by some.

At the last meeting of the Medical Journal Association, Dr. S. Henry Dissan read a suggestive paper on "*The Value of Small and Often-Repeated Doses*." His attention was directed to this subject, he said, by the admirable work of Sidney Ringer on Thera-

peutics. He has found the method an agreeable as well as useful one, particularly in the case of children, and he has had an opportunity of carrying on his investigations in the New York Foundling Asylum and the district service of the New York Dispensary. In these he has been guided partly by the recommendations of Ringer and other recent authorities, and partly by ideas occurring to himself. The following are some of the results obtained. In the vomiting of infants and young children, due to various causes, he found the wine of ipecacuanha in one-drop doses every hour of great efficacy, and it was also very useful when diarrhœa was present. Fowler's solution in the same doses proved equally serviceable in the vomiting after a debauch, and in the morning vomiting of chronic alcoholism, either alone or combined with from three to five grains of capsicum. In the vomiting incident to some forms of phthisis and chronic bronchitis, he found alum in two- to five-grain doses, repeated every one, two, or three hours, to act most happily. After pertussis there was frequently left a cough, without much bronchitis, and occasionally accompanied with spasm of the larynx, which continued for a long time, and he had found that this also was promptly relieved by alum, in from one- to three-grain doses, which might be given in syrup of wild cherry. In a form of bronchitis occurring in children, alluded to by Ringer, which was characterized by loud wheezing and asthmatic-like respiration, and which was chiefly troublesome at night, tartar-emetic proved the most efficient remedy. The strength of the solution used was from one to three grains to a pint of water, and of this a teaspoonful might be given every hour or so. In continued bronchial catarrhs, especially if accompanied by diarrhœa, it was also of great service.

In syphilis, when there was such severe cephalalgia as to render the patient perfectly miserable, one-sixtieth of a grain of calomel, given every hour, acted like magic. In gastrointestinal catarrhs in children he had used calomel in one-sixteenth of a grain doses successfully; but better still was the hydrargyrum cum creta in one-sixth-grain doses. When the stools were of a mucous character, whether containing blood or not, corrosive sublimate was indicated. It was given in a solution of the strength of one grain to sixteen ounces of water, a teaspoonful being ordered every hour. In gonorrhœa, when the case was seen within twenty-four hours from the commencement of the attack, the disease was promptly cut short by injections every hour of a solution of sulphate of zinc of the strength of only one grain to the pint of water.

Dr. Dessan said he believed he had been the first to use copaiba in urticaria, and he had been induced to try it in one-drop doses every hour, on the ground of *similia similibus curantur*. In retarded menses he had used

one-drop doses of the fluid extract of ergot, and in dysmenorrhœa five-drop doses of fluid extract of hamamelis, with success; while in uncomfortable flushes at the time of the menopause one-tenth of a drop of nitrite of amyl had been of service. The tincture of aconite in one-drop doses was exceedingly useful in scarlatina, and tincture of cantharides in the same doses in subacute vesical catarrh. The mineral waters so much in vogue at the present day are also an illustration of the value of small doses, since the active salts in them were in exceedingly minute quantities. Though much of what he had said, Dr. Dessan remarked, might seem to favor the doctrines of homœopathy, he had seen too many cases of intermittent fever cured by large doses of quinine, too many cases of dysentery cut short by drachm- or half-drachm doses of ipecac, and too many cases of delirium tremens at once relieved by a tablespoonful of tincture of digitalis, to commit himself to any such dogma as that. If asked upon what principle he gave these remedies, he would reply, On that of actual experience. Many drugs undoubtedly had a primary stimulating effect if given in small doses, while in larger doses they were powerfully sedative.

He believed with Stillé that the effects of medicines could not be properly determined upon healthy subjects, because in them there was lacking an important element which might modify it very greatly. In the light of recent investigations by various authorities he thought it would be a good plan to have the doses of all the agents in the Pharmacopœia so regulated as to produce the greatest possible effect with the smallest possible quantity, and that if this was done it was probable that the doses of many disagreeable medicines would be materially diminished.

A curious mistake in diagnosis was recently made by two practitioners in good standing here, one of them being in the service of the Board of Health. A young man of Mott Haven was taken ill, suddenly, while visiting a family in 143d Street, and a physician being summoned he pronounced the case one of smallpox. Fearing that the children might take the disease, he had the patient transferred across the street to a house where he had been boarding. The proprietor of the latter was naturally indignant when he learned the character of the affection, and made a complaint to the Board of Health. A sanitary inspector was then sent to the house, and he also pronounced the case one of smallpox, and forthwith had the patient taken to the hospital for this disease on Blackwell's Island. Arrived there, however, it was found that he was suffering from merely an ordinary attack of measles; and the man now thinks of bringing a suit against the officer of the Board of Health for needlessly subjecting him to the dangers of the pest-house.

Up to within the last two weeks the health of the city has been exceptionally good ever since the first of the year, none of the contagious diseases being very prevalent, except scarlatina, and, what is quite unusual in New York, the number of births each week being in considerable excess of the deaths. During the week ending June 30, however, the number of deaths ran up to 569, or 147 more than during the week previous, while the number for the week ending to-day will probably be more than 600. These are pretty large figures, but not for this season of the year. Though the temperature has not been very high, its influence as a factor in the increased death-rate is very evident. Among children under five years of age there are 159 more deaths in the week ending June 30 than in the week ending June 23, and there were 118 more deaths in tenement-houses than in the previous week, 101 of this number being from diarrhoeal diseases. The total mortality among children under five years of age was 354, while in the week ending July 1, 1876, when the weather was considerably hotter, it was but 333. At the last meeting of the Board of Health, President Chandler stated that the visitation by the auxiliary corps of district physicians, organized last summer, would be begun as soon as the necessary funds for the purpose could be secured. The board also proposes to prepare a circular to be printed in English and German and distributed among the tenement population, giving plain directions in regard to the precautions to be taken to avoid sickness during the summer, and suggesting proper food and the means of securing fresh air. In the mean while energetic measures are being taken by various institutions and private individuals to endeavor to diminish the summer mortality among the children.

The first excursion this season of the floating hospital of St. John's Guild was made on Tuesday, the 3d, with 800 passengers. Each trip costs about \$250, and fourteen have already been subscribed for by business houses of the city. They are to be made on Tuesday, Thursday, and Saturday of each week. At the Sea-Side Sanitarium, at Far Rockaway, there are now about eighty sick children, and it is expected that the number of little patients will be increased to 300 or 400. At this excellent institution the surf and still-water bathing, pure air, wholesome food, and kind treatment result in a great deal of good. The New York Free Dispensary for Sick Children has organized an efficient district service for the summer months, and the Children's Aid Society is now employing eight or ten visiting physicians, who supply medical attendance, drugs, and nutritious food free to the poor. Dr. E. G. Janeway is the consulting physician in this service.

Mrs. Osborne, the lady who last year purchased Cozzens's Hotel, at West Point, for a convalescent home for the New York Hospi-

tal, but was prevented by legal obstructions from consummating her design, has now presented a beautiful building, in East 26th Street, to the Training-School for Nurses at Bellevue Hospital. It contains a drawing-room, dining-room, kitchen, laundry, reception-rooms, and forty-eight sleeping-apartments for the accommodation of the fifty-two young women now connected with that institution. This admirable school has made a complete revolution in the nursing at Bellevue and many other hospitals. It was organized in 1873, with a lady superintendent and six nurses, and since that time similar schools have been successfully put into operation in Philadelphia, Boston, New Haven, and other cities, as well as at Charity Hospital on Blackwell's Island.

Six of the house-staff of Bellevue were recently temporarily suspended for refusing to take charge of an obstetric case, in the Maternity connected with the hospital, in the absence of the ambulance-surgeon, under whose care the case properly belonged; but they were reinstated on apologizing to the Commissioners of Charities.

The subject of apothecaries' scales has been investigated by Dr. H. G. Piffard, who was one of the most earnest advocates of the bill, recently before the Legislature, requiring the inspection of all druggists' weights and measures, and he found that the scales used by a large number are grossly inaccurate,—in one instance the balance not being turned by a weight of five grains. Many of the weights are rough and badly finished, and are sold at the cheap rate of a set of thirty-five pieces for thirty-eight cents.

It seems that our grandiloquent friend Dr. Hartt is not to have the great Stewart building for his Hospital for Chronic Diseases after all, but that the original design of making it a hotel for women is to be carried out. It is to be opened during the coming autumn, and it will be the aim of the management to place the rooms at prices only a trifle above those now paid by working-women in crowded and unhealthy tenement- and boarding-houses. Whether any females of Israelitish extraction will be admitted has not yet been announced.

P. BRYNBERG PORTER.

SLEEPLESSNESS RELIEVED BY ELECTRICITY.
—Dr. Vigouroux affirms that he has employed with great success the electric current for the relief of that form of sleeplessness under which many nervous patients are known to suffer. Large flat electrodes, covered with chamois leather, are applied to the temples, and a weak current (from three to five plates) is passed for a very short time. If the application be made for the sake of experiment, in the morning it will be found that the patient continues drowsy during a great part of the day. Headaches connected with organic disease are not relieved by the current.—*Medical Examiner.*

PROCEEDINGS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

THURSDAY EVENING, MARCH 22, 1877.

THE PRESIDENT, DR. H. LENOX HODGE, in the chair.

Pancreatic induration resembling scirrhus; involvement of mesentery, supra-renal capsules, and tissue surrounding kidneys: similar growth upon heart. By DR. DE F. WILLARD.

A. B., widow, æt. 69. Case only seen at time of autopsy. About eighteen months since, commenced to suffer with pain in epigastric region, accompanied by various dyspeptic symptoms, such as occasional vomiting, nausea, constipation, loss of appetite, etc. She was under the care of various practitioners, so that her history is not very complete, but the course of the symptoms appears to have been variable,—the pain at times being severe in character, shooting throughout the whole upper portion of abdomen, while at other seasons the discomfort only amounted to a general soreness and aching. The digestive powers gradually failed, jaundice occurred for several weeks, emaciation progressed, and the patient died from exhaustion.

About two weeks previous to her death a dense mass occupying the lower epigastric region was discovered. Her urine is said to have contained no albumen.

The case presented no evidences or marks of constitutional syphilis; although the character of her husband would not render such a contamination impossible.

Autopsy, forty-eight hours after death.—Considerable amount of fat still remaining in abdominal walls. No effusion or other signs of general peritonitis. Stomach, spleen, and liver normal. Pancreas enlarged to about twice its normal size, extremely hard, firmly fastened to duodenum, and also at one or two points to ileum. Backwards and downwards the dense induration extended in a solid mass, binding the organ firmly to the mesentery, and from thence the hardening continued backwards to a large mass occupying the posterior portion of the abdomen, which afterwards proved to be the entire surrounding connective and fatty tissue enveloping both kidneys. This tumor throughout its entire extent was of extreme density, and was capable of being moved slightly as a solid whole. Upon further dissection, the mesentery was found to be greatly thickened, the induration not being confined to the glands, but involving the whole connective tissue. Both supra-renal capsules were implicated in the growth, being enlarged and hardened. The right kidney was larger than usual, but was of good color, and bore the normal relation of medullary to cortical portion. The surrounding tissues were greatly thickened and compacted by the

growth, but upon the left side this condition was more evident. The induration here was very marked, and it was only by tearing the structure of the kidney that separation could be effected between the capsule and the surrounding mass. On the left side nearly all traces of normal renal structure had disappeared, their place being occupied by depots of pus and softening tissue. With such extensive inflammatory changes, no peritonitis had apparently been awakened.

Upon section, the pancreas cut with the hardness of a scirrhus mass, and presented the ordinary appearance of that disease, save that at certain points there were small white deposits. But little normal pancreatic structure remained, the induration occupying the entire organ. A section of the mesentery presented the same appearances.

Lying in the right auriculo-ventricular groove was a nodule, of the size of an almond-shell, dense and firm, which, upon being laid open, presented to view the same characteristics noticed in the other organs. The atheromatous coronary artery ran directly through this growth.

Report of the Committee on Morbid Growths.

"A microscopical examination of the specimen presented by Dr. Willard, which was situated in the interventricular groove of the heart, surrounding one of the coronary arteries, shows it to consist of an infiltration of granulation-cells, which in places have been converted into spindle-shaped cells; also fasciculi of fibrillated connective tissue are seen. The structure would indicate the growth to be the result of a simple inflammatory process. An examination of the pancreas and mesentery from the same case demonstrated a similar structure.

"April 12, 1877."

Acute lobar pneumonia, beginning at right apex. By FREDERICK P. HENRY, M.D.

O. C., æt. 34, was admitted to the Episcopal Hospital on March 5. About one week before admission he had taken cold through exposure to wet while working at the coal wharves.

On admission he was very weak, although able to walk to his bed in the ward. I was going my round at the time, and examined him at once. I found dulness at the right apex, with loud blowing breathing and bronchophony, but could not detect any crepitation. The history of the case, and the man's appearance, which was quite robust, contradicted the idea of phthisis, which otherwise the physical signs might have suggested. The sputa, owing to the man's occupation, coal-heaving, were blackish.

The next morning the dulness and other signs of pneumonia referred to had extended very decidedly downwards: crepitation was also detected, although this sign was never prominent.

The inflammation gradually progressed downwards until all but the lower portion of

the lowest lobe was involved. Notwithstanding the progression of the inflammation, the man improved after admission, and continued to do so until the 11th, when he suddenly became worse. The temperature, which hitherto had been but little above the normal, now rose to 103° in the evening. There were low delirium and incontinence of urine and feces.

On the 13th he seemed better, and was conscious: did not refuse food and medicine, as he had done the day before. Temperature 103° . Pulse 96, strong and full. Respiration 40.

From this time on he grew gradually worse until 2 A.M. of the 15th, when he died. The man's habits were intemperate.

The *lungs* and *heart* were the only organs that came under my inspection, and are now exhibited. The former present in a marked degree the condition known as anthracosis. The greater portion of the right lung is consolidated, but the stage of hepatization, whether red or gray, cannot be determined by the sense of sight, owing to the intense dark pigmentation.

One of the aortic leaflets is ruptured. The perforation is evidently recent, from the fact that the edges of the rent can be readily approximated. The heart was examined when the man was admitted, and no murmur detected. It is not unlikely that the rupture occurred on the 11th, when the symptoms suddenly became graver.

Large white kidneys accompanying phthisis.

By FREDERICK P. HENRY, M.D.

A. E., æt. 32, female, married, was admitted to the Episcopal Hospital on February 21.

On admission the feet and legs and face were œdematous. The urine contained albumen, but no casts were detected at the only microscopic examination that was made. Soon after admission diarrhœa set in, and it was impossible to obtain another specimen of urine, as it was never passed separately. The catheter was not resorted to.

Examination of the lungs revealed the signs of extensive cavities at both apices.

The patient never complained, but insisted that she felt well, even at a time when it was evident she was dying. Her appetite was good. The pulse was remarkably slow, and continued so throughout, never, so far as is known, passing eighty—and usually nearer sixty—per minute. It ceased to beat some hours before death. There was at no time either delirium or coma,—in fact, no sign whatever of uræmic poisoning, unless the diarrhœa can be so considered.

At the *autopsy*, large cavities were found in the apices of both *lungs*, and below these all the numerous appearances of chronic catarrhal pneumonia, such as slaty induration, collapse, œdema, etc.

The *liver* was slightly fatty. The *kidneys* weighed eight and a half and ten and a half ounces respectively, the right being the

heavier. The cortical portion is increased in relative amount, and is of a pale yellow. The surface is streaked with arborescent vessels. The capsule peels off readily for the most part, but in spots brings with it fragments of the friable glandular substance. The pyramids are bright red and very sharply defined.

It is, I think, still undecided whether this form of kidney is the result of catarrhal inflammation or is simply a fatty degeneration, and therefore the non-committal term "large white kidney" is most appropriate. Those who admit a primary fatty degeneration state that it is most frequently met with in pulmonary phthisis and in phosphorus-poisoning. This is explained by deficient oxidation of ingested fats, as well as of those that are the result of tissue-metamorphosis, due to a diminution in number of the carriers of oxygen,—in the former case from "anæmia," in the latter from direct destruction of red corpuscles.

In anæmia there is also, besides the deficient oxidation, another cause active in the production of fatty metamorphosis, viz., an increased destruction of albumen. This has been shown by the experiments of Bauer.

The change known as fatty metamorphosis is held by many to be a separation of an amalgam-like combination between the albuminoid and the fatty elements of the cell: therefore any cause favoring destruction of albumen will also favor the fatty change.

In advanced phthisis both these causes of fatty degeneration are in operation.

The slow pulse is certainly a rare event in the history of phthisis. The absence of all signs of uræmia, other than the diarrhœa, and especially the preservation of consciousness up to the last moment, are also significant, and merit an attempt at explanation. It would seem as if there were a certain antagonism between phthisis and Bright's disease in some of its forms; and this I believe to be the case.

It is a commonly-held view that in Bright's disease it is not the urea retained in the blood that gives rise to the symptoms known as uræmic, but its conversion into carbonate of ammonium. Now, for this conversion certain additional equivalents of oxygen are demanded, and, if these are not supplied, uræmic symptoms may not be manifested. In extensive pulmonary disease oxygen is just the element that is most deficient, as evidenced by the above-mentioned fatty degenerations; and thus is perhaps to be explained the antagonism between phthisis and Bright's disease.

Dr. JOHN GUITÉRAS asked Dr. Henry whether the induration of the lung to which he alluded was a marked feature,—whether, in a word, the case could be called one of fibroid phthisis.

Dr. HENRY said that it was not.

Dr. GUITÉRAS said he had asked because he had recently met two cases at the Philadelphia

Hospital, in which Bright's disease of the kidneys had accompanied fibroid phthisis, and he had been led to look up the matter, and had found that fibroid phthisis was not infrequently attended by Bright's disease.

Dr. Guit  ras agreed with Dr. Henry, that where these two diseases coexisted, and the affection of the lung became very active, the renal disease seemed to be partially in abeyance. In one of the cases under his observation the symptoms of the latter disease, which had pointed to the fatty organ, had so diminished that he thought the kidney had reached its third or contracting stage. The urine had increased in quantity, the albumen had diminished so that sometimes it was difficult to detect it, and the dropsy had disappeared. He died without ur  mic symptoms. The kidney was the large fatty with commencing contraction.

Dr. JAMES TYSON said it was well known that Bright's disease and phthisis are often associated, but he thought it was commonly supposed that the former was a sequel, and presented the albuminoid form of disease, consistently with the view now generally held, that albuminoid disease ensues upon exhaustive drains on the system, as those of tertiary syphilis or suppurating disease of bone from any cause, or from phthisis or even albuminuria itself.

Dr. JAMES C. WILSON said he was reminded by the instance referred to by Dr. Guit  ras of a case of chronic phthisis which had died under his care, at the age of 40. The patient, a man, suffered also from Bright's disease. His urine contained albumen with fatty and granular casts. When he first came under observation there were evidences of a cavity at the right apex, but the form of the disease was exceedingly chronic, the man being sufficiently well to do duty as an assistant in the ward, and presenting very few of the symptoms of phthisical or renal trouble. Dropsy was absent or nearly so; the quantity of albumen was slight, although easily recognizable. From the symptoms, Dr. Wilson was led to make the diagnosis of contracted kidney. Here also the tendency of the phthisis was towards contraction. A short time before his death the left lung became affected, a cavity formed, and he died within three or four weeks of secondary miliary tuberculosis. At the *post-mortem* examination it was found that the form of disease was that of the fatty or fatty and contracting kidney. The organs presented the puckered appearance with local atrophy of the cortical substance with contracting and adherent capsule, whilst elsewhere the cortex was thickened and distinctly fatty.

Dr. TYSON said he had at this time under observation a gentleman who had had phthisis for about five years, in whom there was also a small albuminuria with granular and hyaline casts, the conditions usually considered as pointing to the contracted kidney.

In answer to a question of Dr. Guit  ras, Dr. T. said the symptoms in this case did not point to fibroid induration of the lung.

Dr. WILSON thought the presence of diarrhoea in Dr. Henry's case might account for the absence of terminal ur  mic symptoms.

Partially-closed foramen ovale—sudden death.

By Dr. J. T. ESKRIDGE.

The child whence the specimen was derived was 20 months old at the time of its death, and had enjoyed moderately good health previously. On the afternoon of March 9, 1876, it was wheeled in one of our squares for an hour. Although the day was a mild one for the season, it apparently took cold, and was noticed to cough some during the night, but it seemed well on the following morning. After the mother had dressed her babe she was dancing it on her knee, when it suddenly became convulsed and cyanosed, and died immediately. There was no history of cyanosis previous to the occurrence just before death.

The *post-mortem* examination, made on the following day, showed—

The air-passages healthy, save a slight venous congestion of the lungs. There was, however, an imperfect closure of the foramen ovale, the opening being large enough to permit a small-sized lead-pencil to be passed through it. The stomach healthy. Examination of the brain was not permitted.

Could such a condition of the heart cause so sudden a death in a child apparently healthy?

Dr. GUIT  RAS said that this condition is a cause of death in the new-born, but it was doubtful whether death could be attributed to this condition in the present case, for it should be remembered that the *foramen ovale* remains open for some time after birth, and it is rather the direction of the currents of blood from the ascending and descending *venae cavae* which prevents the blood from passing over to the left auricle, than the closure of the orifice. It is reasonable to suppose that some sudden nervous disturbance might result in such derangement of the currents of blood that death might occur.

Dr. WHARTON SINKLER said the presence of a patulous foramen ovale did not necessarily imply cyanosis. This condition of the auricular septum is often met with in *post-mortem* examinations of old persons, as illustrated by the case of a woman, 60 years of age, whose heart he had presented to the Society some time ago. Here the opening was sufficiently large to admit a lead-pencil, and there were no symptoms during life which pointed to the condition. He thought that in the absence of an examination of the brain, no condition presented by the specimens shown could be considered as sufficient to cause death.

Dr. TYSON asked whether any other cause of convulsion was found, as undigested food in the stomach. He thought it not impossible that

the convulsion might have produced such a derangement of the currents of blood that the venous blood would thus pass over to the left side of the heart, and thus cause the cyanosis.

Dr. ESKRIDGE replied that no cause of the kind suggested could be found.

Dr. SINKLER said that the fact that convulsions themselves cause cyanosis should be borne in mind.

Dr. HENRY said the question arose as to whether convulsions occurring under these circumstances (with patulous foramen ovale) were more serious than those that occurred, for instance, in the period of dentition.

Dr. HODGE said that too much importance could not be attached to the examination of all organs in making a *post-mortem* examination, especially in medico-legal cases, where the question whether *all* the organs were examined is frequently put.

The causative relation existing between the anatomical arrangement of the tissues at various ages and their morbid growths. By Dr. CHAS. B. NANCREDE. See original communication in current number of the *Times*.

REVIEWS AND BOOK NOTICES.

THE QUESTION OF REST FOR WOMEN DURING MENSTRUATION. By MARY PUTNAM JACOBI, M.D., Professor of Materia Medica in the Woman's Medical College, New York. Boylston Prize Essay, 1876. New York, G. P. Putnam & Sons, 1877.

A very fitting subject for the pen of a woman, if women are to contribute their share to medical literature. It will not do, however, to say that this book is a good one, "considering that a woman wrote it," for it is a remarkable book whether written by man or woman; the sex of the writer, however, being evidently a help to her in the task she has chosen. We can discover little or no traces of that intuition, to the neglect of sound reasoning, for which women are traditionally famous. The most captious critic must admit the solidity of its argument, the depth of its research, the purity of its style.

The plan of the inquiry is purely scientific. Menstruation is studied *ab initio*. The question of rest, and the question of the importance of definite views on the subject, are first discussed. The theories of menstruation are carefully stated and examined; then is shed all the light that the author could obtain from the scientific methods of the day, from the thermometric range in women before, during, and after menstruation, from the sphygmographic register, pages of tracings being given, from the examination of the excretions, and, lastly, from an appeal to women themselves.

In entering into statistical inquiry, some grave difficulties appear. The circular issued

contains a series of questions requiring each an answer, but no signature. With the questions asked we have no disposition to cavil. We are not told exactly in what way the circular was distributed, whether to and through the patients of the author, or to the women of certain large workshops, or to ladies in ordinary society, or whether any systematic distribution to reach all classes in equal proportions was even attempted; nor can we at a glance discover, even if the circulars were sent promiscuously, what class of women—the suffering or those free from menstrual pain, the educated or the uneducated—would be most apt to respond: a very important point, since of one thousand circulars only two hundred and sixty-eight answers were obtained. A certain number of well women would ignore it from lack of interest; a certain number of habitually ailing women from lack of energy. To the habitual errors of statistical inquiry is here added the probable error of imperfect representation, as well as the further one of dealing with altogether too limited a number of cases.

The writer, as though to revenge herself upon the male sex, has been as abstruse as possible. The favored few who, having gone over the tables of statistics served up in every imaginable form, feel unsatisfied, can still further satiate themselves with the algebraic method. The chapter on the theory of muscular reserve will be a godsend to the misplaced astronomers and mathematicians who occasionally find their way into the ranks of the profession. Such expressions as $R + F = D$, and $A + A - a + A - a$, at which the average mind shudders, will fill them with unbounded delight; though we doubt whether they really convey any very definite idea to the vast majority of readers.

The author's method of estimating physical condition by the number of miles that can be walked, and the extreme gravity with which she accepts in the answered circulars the respondents' own estimate on this point and reasons upon it, are, we would like to say, amusing. To quote a sentence from p. 50: "In group second, then, seventy persons walk collectively two hundred and twenty-eight miles, an average of three and one-fourth miles, while in group third, eight persons walk eighty-two miles, an average of four and five-ninths." The mind fairly totters under this collective pedestrianism; and one cannot help feeling that, after all, these heroic women may have walked in vain.

The author's analysis of statistics is masterly, but the statistics are too feeble for the analysis. No one can help admiring candor, yet one could scarcely expect to find such an admission as this in such a work (p. 199): "The very highest degrees of sustained attention have rarely been even attempted by women; while the lower degrees, necessitated by the exigencies of every-day life, are fre-

quently followed by a collapse of nervous energy that seems perfectly unaccountable when we consider only the amount of work accomplished, its severity or its difficulty." True, the writer adds in a foot-note that considered "absolutely," whatever that may mean, the amount of such work performed by women is "immense." As a corollary, however, to the sentence quoted above, we would suggest that women should not attempt to read the present volume, lest the effort be followed by a "collapse," not, however, quite unaccountable.

The author considers it just as foolish to account for women's sufferings by "empty generalizations on the abstract nature of the female sex" as it would be to treat any similar male complaint—if we catch her meaning—"upon principles derived from Pascal's lofty aphorisms concerning the nature of man." Her conclusions are opposed to the necessity of rest. Cases of very painful menstruation, as she remarks, will rest because they must; but her grand conclusion is, "There is nothing in the nature of menstruation to imply the necessity or even the desirability of rest for women, where nutrition is really normal," thereby throwing overboard for the sex all the work done lately by Dr. Clark and others, and reducing the matter, very much as Dickens's "contractor of five hundred thousand power" did, to "a question of beefsteaks and porter: so many pounds of beefsteaks, so many pints of porter; those beefsteaks and that porter are the fuel for that young woman's engine." This is truly a startling success for the statistical method; but the women—save them from their own champions!—will surely now have to work harder than ever. We wonder whether statistics could not prove that it injures the shop-girl to sit down occasionally, and whether well-meaning people, philanthropically inclined, may not be taking considerable trouble to do women an immense amount of unconscious injury.

E. W. W.

MEDICAL AND SURGICAL REPORTS OF THE BOSTON CITY HOSPITAL. Edited by Dr. D. W. CHEEVER and Dr. F. W. DRAPER. Second Series. Boston, 1877.

This is a very handsome and a very creditable volume of over three hundred pages, beautifully illustrated, and full of clinical papers which represent the furthest progress of medicine and surgery. The first paper, after a very full account of the hospital as remodelled, is one of very general interest, detailing ten cases of empyema, of which no less than ten were successfully treated by incision by Dr. John G. Blake. Of the remaining sixteen papers just half are surgical, and contain the records of an enormous amount of clinical work. Diseases of the nervous system come in for a very large share of attention. Skin diseases are also discussed by Dr. Damon; and Dr. Edes contributes a care-

ful article to the cold-water treatment of typhoid fever. In the brief space allotted it is impossible to analyze the individual articles in the report; but we sincerely congratulate the hospital trustees and the city authorities of Boston upon this volume, which, so far as we know, as a municipal publication has no compeer upon the continent.

A GUIDE TO THERAPEUTICS. By ROBERT FARQUHARSON, M.D. Smith, Elder & Co., London.

This is a small manual, belonging to the class of "cram books," and, therefore, of abominations. It should be said in its favor, however, that it is fuller than most works of the class, and we suppose will be of service to such students as use "Biddle's Materia Medica," giving them in regard to therapeutics much what that work does for materia medica. We notice among its prescriptions some whose chemistry is most complicated. What the patient will receive, when they are administered, is one of those things "no fellow can find out." Witness the mixture—nitromuriatic acid, taraxacum juice, alcohol, chloroform, water, etc.—for "sluggish liver," page 55. Here, we suppose, the acid is resolved into its component acids, which in turn react with the alcohol and the organic matters of the taraxacum juice; but the final result is hard to reason out. We do not want to give too unfavorable an opinion of Dr. Farquharson's progeny: in spite of occasional carelessness or recklessness as to chemistry, it is the best book of its class we know of on the subject, and no doubt will command the favorable judgment of many students.

GLEANINGS FROM EXCHANGES.

HYDROTHERAPY IN SYPHILIS (*The Canadian Journal of Medical Science*, June, 1877).

—Dr. Hofmeister, of Pesth, has come to the following conclusions in regard to the employment of hydrotherapy in syphilis:

1. The employment of cold water in syphilis notably increases the general nutrition.
2. The increased energy of digestion facilitates the absorption of alimentary substances and medicines.
3. The preferable mode of administration of mercury is by inunction.
4. Cold water, by promoting absorption, necessitates a smaller quantity of mercury.
5. The augmented activity of the secretory organs prevents the accumulation of mercury in the system.
6. The duration of treatment is much shorter than under ordinary circumstances.
7. Segregation of the patients is not necessary, because the cold water represses their ardor.
- And 8. Salivation does not occur, and it is not necessary to suspend the treatment.

GELSEMINA (*The Lancet*, June 9, 1877).—Mr. John Tweedie calls attention to the action of gelsemina on the pupil, the ocular muscles, and on accommodation. He says, "The importance which is now very properly attached to correction of anomalies of refraction, and especially abnormal regular astigmatism, necessitates the frequent and almost constant use of atropine to overcome the power of the accommodation for near objects. But against atropine there has always been the serious objection that its effects last so long that great inconvenience arises to the patient from being unable to do near work for several days after the error of refraction has been estimated. If the pharmacopœial solution of sulphate of atropine has been employed, at least eight to twelve days must elapse before the accommodation returns to its normal state. With gelsemina, on the other hand, sufficient accommodation returns within ten to fifteen hours to enable a person to read newspaper type at twelve inches, and within thirty hours the accommodation will have practically returned, although the pupil may remain somewhat dilated, though not quite immobile, for several days. The mistiness and confusion of vision when the eye is fully under the influence of gelsemina is nothing like so great as when atropine has been used.

Practically, it may be stated that gelsemina locally applied readily dilates the pupil, and, when used of sufficient strength, temporarily overcomes the accommodation. It is preferable to atropine in cases where the power of accommodation is not great, where it is necessary to overcome the accommodation for a short time only for the purpose of estimating the degree of ametropia, because its effects are more transient and the confusion of vision during its action is less. To insure paralysis of accommodation within three hours, a solution of at least eight grains to the ounce must be used every fifteen minutes for the first hour, and every half-hour afterwards.

BONE PERCUSSION (*The Clinic*, June 9, 1877).—Bone percussion is practised either for the purpose of detecting painful spots in the bone, or for determining the pathological changes which would cause alterations from the normal sound. Professor Lucke has paid considerable attention to the latter feature, and has arrived at the following results. In the long bones the epiphyses develop a higher note on percussion than the diaphyses. Corresponding bones in healthy individuals emit notes of the same height on either side of the body. Recently-united fractures give a deeper note. Closure of the medullary canal and the deposition of an excessive amount of osseous material can be readily determined by percussion. A lower note is obtained over diseased epiphyses. On the contrary, in a case of chronic gonitis, the diaphyses of the affected tibia presented a considerably higher note than the healthy one of the opposite side

of the body. Whether the fingers or the hammer be employed, the limb should be elevated, and for the moment be held up so as to avoid all likelihood of error.

THE ANTIPYRETIC TREATMENT OF TYPHOID FEVER (*The Lancet*, June 2, 1877).—Mr. Shirley F. Murphy, resident medical officer in the London Fever Hospital, at the conclusion of an article upon the above subject, states that, although the evidence of German writers is weakened by the want of separation of cases of febricula from undoubted enteric fever, their statistics show a considerable balance in favor of the antipyretic treatment; that although the cases treated in the London Fever Hospital are too few to urge as statistical proof of the efficacy of the treatment, the results on individual cases have been sufficiently satisfactory to lead to its general adoption in that institution. It is not contended that it will insure the recovery of every patient suffering from enteric fever, that it will save life in those patients who die in the second week of their illness from the direct influence of the poison, nor that, when commenced late in the third week, it will undo the injury that has already occurred. It is not believed that it will shorten the period of illness; for it has even appeared to prolong it, although this may be due to the fact that the more severe cases have been bathed,—cases which would under any circumstances have run a long course. But there is a large class of cases which, under the expectant treatment, die at the end of three or four weeks, worn out by the continued pyrexia, and these can without doubt be saved by an early and systematic antipyretic treatment.

The difficulties of the treatment are considerable. An intelligent nurse can be trusted to take the temperature of the patient. Any bath long enough for the patient to lie down in will answer the purpose, while its temperature can be easily regulated by the addition of a pail or two of hot or cold water. A little attention to the time at which the bath is given and to the use of quinine will enable any practitioner to give to it all the time the case requires, without any great interference with his other duties. The treatment is not attended with any danger, the patients rarely object to it, and by some it is liked. The reduction of delirium, the quiet sleep, and the general feeling of comfort it gives the patient, are sufficient to convince the most sceptical that the cold bath is one of the most useful therapeutic agents we have in the treatment of enteric fever.

VOICE WITHOUT VOCAL CORDS (*The Clinic*, June 9, 1877).—Dr. Jelenffy claims to have succeeded in giving the ability to speak to a patient whose true vocal cords had been destroyed by inflammatory processes. He removed the cicatrized growth which had taken the place of the true cords, and, by the appli-

cation of the induction current to the so-called "false cords" for a period of some months, restored to him a comparatively useful voice.

THE ETIOLOGY OF TYPHOID FEVER (*Virginia Medical Monthly*, May, 1877).—Dr. W. H. Bramblett reports seventeen cases of typhoid fever, carefully considers their causes, and comes to the following conclusions:

1. Typhoid fever often originates spontaneously, or the contagium to which the disease owes its specific character may originate *de novo*.

2. Typhoid fever is essentially a contagious disease, and a case that has originated autochthonously is capable of infecting, directly by contagion, the well who go into the presence of those having the disease.

3. One attack gives immunity from subsequent attacks, and this rule is as invariable in typhoid as in measles or smallpox.

DEATH DURING ANÆSTHETIZATION BY ETHER (*Virginia Medical Monthly*, April, 1877).—Dr. Benjamin W. Robinson reports the death of an elderly lady from whom he was removing an axillary tumor. He gives the subjoined verbatim report of the assistant who was administering the anæsthetic:

"Mrs. M. inhaled the ether without resistance, and without any disturbance of respiration. It was twelve or fifteen minutes from the beginning of the use of the ether before she was sufficiently anæsthetized to commence the operation. The pulse was at this time stronger than before beginning with the ether, and it was regular. After the operation had been begun, I would withdraw the ether, until its effect would begin to pass away, and then renew it, when but few inhalations would be necessary to bring her fully under its influence. When the operation had been continued about twenty-five minutes, the pulsation in the radial and temporal arteries ceased, which had been continually failing since the beginning of the operation, with pallor gradually coming on. The respiration was good up to this time. When I noticed that the pulsation in the arteries was about to cease, I stopped administering ether, and gave a drachm of brandy-and-water (equal parts) hypodermically: her head was lowered, and she soon revived sufficiently to speak and move her limbs. Then the operation was proceeded with, but without using more ether. In a few minutes she vomited, after which it was seen that she was sinking; and again her head was lowered, and the brandy-and-water used hypodermically (about four drachms), also one drachm of aromatic spirits of ammonia. About eight ounces of Squibb's washed ether were used, but much of it was wasted. About five drachms of brandy-and-water were used hypodermically, and one drachm of spirits of ammonia."

A NEW AND SIMPLE METHOD FOR THE REMOVAL OF LARYNGEAL POLYPI (*The Medical Record*, June 2, 1877).—The *Monatschrift für*

Ohrenheilkunde of 1877 contains the description of a new procedure by Voltolini, by which he manages to remove inter-laryngeal growths without either special instruments or a mirror. He simply swabs out the larynx, and in so doing tears off the soft polypi. The swab consists of a flexible wire, to which is attached a sponge whose diameter does not exceed, at the utmost, one millimetre. The sponge, having previously been softened in water, and then pressed out, is introduced "blindly" into the larynx, which closes upon it. No attempt should then be made to advance or press downwards until the larynx opens again. If this takes place, as is very often the case, then the swab must be passed up and down between the vocal cords. In favorable cases, when the sponge is withdrawn the polypi will be torn off. The method is only applicable to comparatively slow growths. It is thought that after the diagnosis has once been made, any practitioner may be able to do the operation successfully. Voltolini gives six cases in which this simple method was pursued.

AIR-BUBBLES IN THE VITREOUS BODY, FOLLOWING PERFORATING WOUNDS (*The Clinic*, June 9, 1877).—Mr. A. Stanford Morton records, in the *Royal London Ophthalmic Hospital Reports*, vol. ix. part i., two cases which are worthy of notice as interpreting a condition which might readily be the source of an erroneous diagnosis. In each case there had been a wound of the sclerotic by a chip of metal; and upon examining the fundus with the ophthalmoscope, to determine the presence or absence of the piece of metal, a body presenting a peculiar metallic lustre could be seen. This was at first taken to be the foreign body sought, but a closer examination showed that it was, in reality, a bubble of air carried into the vitreous body by the chip of metal. It was about as large as the optic disk flattened, bright at the centre, and bounded by a uniform dark zone.

In twenty-four hours after the injury these bubbles of air had almost gone, and in thirty-six had entirely disappeared.

THE ARTERY CONSTRICTOR (*The Lancet*, June 9, 1877).—At the close of a recent meeting of the Clinical Society of London, Mr. Henry Morris exhibited some specimens of the external iliac and common carotid arteries, removed from dead subjects, which had been subjected to constriction by Dr. Fleet Spiers's "artery constrictor." He also demonstrated the mode of application of the instrument. The constrictor acted much as the ligature and torsion by dividing the internal and middle coats: it did not, however, destroy the external coat, while the inner coats could be peeled away and involuted to a degree varying with the extent to which the screw of the instrument was worked. The specimens showed the success of the constriction. The instrument had to be applied for a few seconds only, and after

its removal it was found that the involution of the coats was of itself sufficient to resist the flow of fluid injected into the artery. The results of experiment on the dead subject, and the trials which had been made of the constrictor on the living by American surgeons, were very satisfactory: so that it deserved, Mr. Morris thought, a fair trial from all surgeons interested in measures having for their object the checking of hemorrhage or the occlusion of arteries in their continuity without leaving any foreign body whatever in the wound. In aneurisms of the arch of the aorta, of the innominate, carotid, subclavian, and axillary arteries, torsion was impossible, Esmarch's bandage out of the question; compression was neither convenient nor safe, even when it could be borne; carbolized catgut ligatures had been proved to be unreliable, and the galvano-puncture was fraught with dangers of its own. In such cases as the above, constriction by the "artery constrictor" seemed to possess advantages over all other methods, and promised a fair amount of success.

CITRIC ACID IN DIPHTHERIA (*The Clinic*, June 9, 1877).—Dr. Caspari writes to the *Deutsche Med. Wochenschrift*, that he has treated successfully over forty cases of diphtheria by using locally (with the spray and brush) slightly diluted citric acid. Several of these cases had resisted treatment by salicylic and carbolic acid. Appropriate constitutional treatment was, of course, combined with the local.

A SUCCESSFUL CASE OF GASTROTOMY FOR STRICTURE OF THE ESOPHAGUS (*The Clinic*, June 9, 1877).—A case of this description is reported by M. Verneuil. The stricture was caused by swallowing a potash lye. Of over twenty cases of gastric fistula made for this purpose, this he claims is the first successful one.

MISCELLANY.

CONCENTRATED LIME-JUICE AS AN ANTISCORBUTIC.—According to the testimony of Dr. Denis Macdonald, F.R.S., Professor of Naval Hygiene at Netley, and Dr. De Chaumont, Professor of Military Hygiene, before the Arctic Committee, it appears that lime-juice when unfortified will freeze at about 25° F., and when fortified with ten per cent. of spirit forty over proof, will congeal at about 15°. If a greater proportion of spirit is added, freezing is stopped altogether, and all possibility of breaking the bottles is obviated. Lozenges of concentrated juice were produced at the committee, an ounce of which was equivalent to one ounce of lime-juice with the ounce ration of sugar; and others have been made with lime-juice so concentrated that four lozenges are equal to one ounce of juice. It is in evidence that this

juice may be reduced to a tenth of its bulk, or perhaps less, without altering its chemical composition in the slightest degree. The late Dr. Parkes found that even on evaporating lime-juice to dryness there was no loss of acidity. There is no reason whatever to believe that the antiscorbutic properties of the juice would be impaired by this process of concentration. If the lozenge form were adopted (and it is stated that they are not unpleasantly acidulated), a man in a sledge or any other expedition could easily carry in his pocket his ration for thirty or forty days.

M. VERNEUIL ON SPERMATORRHOEA.—At a meeting of the Société de Chirurgie, of Paris, in April last, M. Verneuil mentioned that M. Monière, a hospital student, had a brother who for the last fourteen years—ever since the age of 19—had suffered from spermatorrhœa, with erections. The patient was almost rendered sleepless, for as soon as sleep commenced the young man had erections and seminal emissions. Several persons passed the night at his bedside, with the injunction to awaken him so soon as erection ensued; and his brother invented a very ingenious apparatus to which he had given the name of *electro-medical alarm*. A small, very light ring was attached in front of the pubis by cords; two cords make this ring communicate with the poles of a pile; the penis is introduced into the ring so that contact takes place, but no kind of pressure; on the contrary, as soon as the penis becomes erect the smallest pressure makes the battery to work. In order not to disturb neighbors, the bell is made very feeble, but then it is necessary that an india-rubber tube should make the bell communicate with the ear. Since the patient had used this instrument the spermatorrhœa had almost altogether disappeared, gradually, and his general condition had greatly improved. M. Panas said that cases of cure of this kind were not absolutely new. M. Ricord had told him several times of examples of cure obtained in this way. M. Desprès observed that Lallemand and Tissot had shown that dorsal decubitus caused nocturnal erections and emissions, and mentioned that in certain schools where the boys had nocturnal emissions, the night nurses prevented them lying on their back, and turned them on their side.—*The Doctor*.

THE TREATMENT OF TAPEWORM.—Prof. Mosler has been advocating a system of treating tapeworm which, according to a Swiss medical journal, has been attended with remarkable success. Its chief characteristic is the injection of large quantities of warm water into the colon, after the administration of the anthelmintic. The diet is first regulated, food being given which is supposed to be distasteful to the tapeworm,—bilberry tea, her-rings, sour cucumber, salted meats. The intestine having been, as far as possible, emptied by laxatives, a dose of the extract of

pomegranate-bark is administered, prepared from the fresh bark, and then a large quantity of warm water is injected into the rectum. The theory is that the worm, previously brought down into the colon, is prevented by the water from attaching itself to the wall, and is brought away by the liquid on its escape. It is asserted that in every case in which this treatment was adopted the head of the worm was removed.—*London Lancet*.

OSCAR, the King of Sweden and Norway, has, through the minister at Washington, Mr. Lewenhaupt, conferred the decoration of Knight Commander of the Norwegian Order of Olaf upon Prof. Wm. Pepper, in acknowledgment for services rendered to the Norwegian Commission at the Centennial Exhibition.

CHEAP COLLODION.—The *London Chemist and Druggist* says, "A cheap way to obtain collodion is to steep white printing or machine paper in concentrated sulphuric acid from five to eight minutes; wash and dry it. It is now stiff as parchment, and should be cut small and digested in ether."

THE NEBRASKA STATE MEDICAL SOCIETY has practically decided that popular advertising is not contrary to its code of ethics. It has refused to censure or discountenance a surgical firm which has largely advertised itself through the secular papers and by means of circulars.

NOTES AND QUERIES.

FORT CRAIG, NEW MEXICO, July 3, 1877.

TO THE EDITOR OF THE PHILADELPHIA MEDICAL TIMES:

SIR,—From page 420 of your issue of June 9, 1877, I extract the following paragraph:

"TO PREVENT THE FORMATION OF MILK, Dr. Peaslee, of New York, recommends that the breasts, after delivery, be tightly strapped by means of adhesive plaster. In five cases he reports perfect results."

I am sure that Dr. Peaslee would be the last man to claim that he was the originator of any mode of treatment of which he was not the author. The history of this idea of strapping the breasts with adhesive plaster to prevent the formation of milk is the following.

In a report of the meeting of the New York Academy of Medicine on November 19, 1874, given in the *New York Medical Record* for December 13, 1874, it will be seen that this identical subject came up for discussion, and that Dr. Peaslee and other members gave their views on that matter, and the different methods of treatment adopted by them.

Having had some experience of such cases, both in private and army practice, in which I had used strapping with the most successful result, I wrote to Dr. Peaslee on the subject, who replied to my letter, thanking me for my communication, and promising to bring the matter both before the Academy of Medicine, and his own class of obstetrical students at the Bellevue Hospital Medical College. Not seeing in the medical journals any report of the discussion on my paper, I again wrote to Dr. Peaslee on that subject, who replied to me in a letter of which the following is a copy:

"29 MADISON AVENUE, NEW YORK, June 26, 1875.

"DEAR DR. WILSON,—I intended long ere this to have replied to your letter of the 11th ult. My absence on a journey to the South prevented me from bringing the subject of your first letter before the Society, as I had intended, though I spoke of it to several obstetricians here, just as I was about leaving. Since my return I have been so pressed as not to be able to be present at the meetings as I had expected. But at the meeting for this month of the Obstetrical Section of the Academy of Medicine, your letter was formally presented, and the subject discussed. No one present but

myself had ever used plaster as ordered by yourself. I have done so in five cases since I received your first letter, and in every instance with perfect success. I had two cases requiring some method to prevent the secretion of milk in a single day, the 4th of this month. All were pleased with the idea of strapping as you propose, and voted unanimously to thank you for your interesting letter, and to insert it in the records of the Society. I shall bring up the subject again next fall in other Societies, as they have all now adjourned through the summer. With many thanks for your valuable communication, I am

"Yours very truly,

"E. R. PEASLEE.

"Dr. W. I. WILSON, Assistant-Surgeon, U.S.A."

The vote of thanks of the Obstetrical Section of the Academy of Medicine was duly and formally conveyed to me by the secretary, Dr. S. Caro, New York, in his letter dated September 15, 1875.

It will be seen from the above communication that I was the first to propose to this Society the use of strapping the breast by adhesive plaster to prevent the secretion of milk in cases of still-birth, etc., etc. I am glad to find that Dr. Peaslee's further experience of this mode of treatment continues so satisfactory that he is able to favorably recommend it to the profession.

WILLIAM I. WILSON,
Assistant-Surgeon, U.S.A.

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY FROM JULY 1, 1877, TO JULY 14, 1877, INCLUSIVE.

SWIFT, E., LIEUTENANT-COLONEL AND ASSISTANT MEDICAL PURVEYOR.—Relieved from duty as Medical Director, Department of the Gulf, to proceed to New York City and relieve Colonel C. Sutherland, Surgeon, of the charge of the Medical Purveying Depot in that city. S. O. 147, c. s., A. G. O.

STERNBERG, G. M., MAJOR AND SURGEON.—Telegraphic instructions of 19th inst. to proceed with ample medical supplies, with Companies B and H, 21st Infantry, from Fort Walla Walla to Lewiston, Idaho Territory, confirmed. S. O. 86, Department of the Columbia, June 29, 1877.

BROOKE, J., CAPTAIN AND ASSISTANT-SURGEON.—To accompany 2d Infantry to Department of the Columbia, and return to his present station, unless otherwise ordered. S. O. 133, Department of the South, July 7, 1877.

KINSMAN, J. H., CAPTAIN AND ASSISTANT-SURGEON.—Assigned to duty as Post-Surgeon at Jackson, Mississippi. S. O. 114, Department of the Gulf, July 4, 1877, and granted leave of absence for one month, with permission to apply for one month's extension. S. O. 116, c. s., Department of the Gulf.

DE HANNE, J. V., CAPTAIN AND ASSISTANT-SURGEON.—To accompany troops to Fort Clark, Texas, and report to the Commanding Officer, District of the Nueces, for assignment. S. O. 125, Department of Texas, July 7, 1877.

ELBREV, F. W., CAPTAIN AND ASSISTANT-SURGEON.—To accompany 2d Infantry to Idaho Territory, and return to his present station, unless otherwise ordered. S. O. 133, c. s., Department of the South.

ADAIR, G. W., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—To report to the Commanding Officer, District of the Rio Grande, Fort Brown, Texas, for duty. S. O. 125, c. s., Department of Texas.

SEMG, B. G., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—Assigned to temporary duty at Camp McDermitt, Nevada. S. O. 76, Division of the Pacific and Department of California, June 29, 1877.

REED, W., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—Assigned to duty at Camp Apache, A. T. S. O. 66, Department of Arizona, June 26, 1877.

HALL, W. R., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—Telegraphic instructions of 20th inst. to accompany troops on board steamer "California" to Lewiston, Idaho Territory, for field service, confirmed. S. O. 86, c. s., Department of the Columbia.

TORNEY, G. H., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—Assigned to duty at Fort Gibson, Indian Territory. S. O. 125, Department of the Missouri, July 5, 1877.

GARDINER, J. B. W., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—Assigned to duty at Camp Lowell, Arizona Territory. S. O. 66, c. s., Department of Arizona.